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Do not think of your faults; still less of others' faults; look for what is good and strong, and try to imitate it; your faults will drop off, like dead leaves, when their times come.—Ruskin.

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Vol. 8 JUNE No. 6

PAST AND FUTURE OF THE MONTHLY REVIEW

By The Editor

In closing the year's—or rather the two years'—term as editor it is not our intention to offer any apology for our efforts. Our ambition has been to do the very best within our ability for the interest of the American Electro-Platers' Society, not sparing time or energy to accomplish this. We realize that a publication like the "Monthly Review" in order to merit the approval of members must have material of a high grade, and also that which is the experience of some of our modest members. The result of our efforts is now history and, conceited as we may be, we covet for our publication a higher standard.

We must take up its past for a basis of its future development. Every member of our society is responsible for its advancement. The contributors are the ones that have made it and to them the credit should be given; they themselves are the most satisfied, for they have done their part, or, to use the favorite expression of our former editor, they have "cast their bread upon the waters."

We have no criticisms and request that any shortcomings on the part of the editor be considered as unintentional.

The support given by the several branches in the various "Branch Numbers" for several months past is to be most heartily commended. We have expressed our appreciation for this feature from time to time and again thank the members of the branches that have made them a success, and also thank everyone who has contributed in any way, not forgetting the secretaries who have done their best.

The Supreme body at its coming session should consider seriously any suggestions regarding the future of our publication, maintaning its best features and eliminating weaker ones by supplanting them with better.

Our profession, like all lines of business, has an entirely different condition to face than we had a year ago, and our society must meet the responsibility. We are not only a part of the American Electro-Platers' Society, but a part of the business, and as such and also as individuals we must put our shoulder to the wheel to meet conditions as they come.

Each month we have printed a short selection which are the words of other minds, yet we trust that they have found expression in many of our readers. Let us continue together in the spirit of the American Electro-Platers' Society to help each other.

When you buy your ticket to Indianapolis, for the convention, on June 29-30, July 1-2, be sure to get a certificate. If we get the reduced fare on return trip, it means every one counts, so get one even if you are not returning direct, it will help those that do. We publish on another page additional information; read it.

FINISH PROCESS SPECIFICATIONS FOR GALVANIZING STEEL STAMPINGS IN CYANIDE ZINC SOLUTION

By W. B. Pleadwell, Cleveland Branch.

The following process is used by the writer for finishing sheet steel parts:

Operation No. 1

PICKLING

Load parts in a large dipping basket, about 30 per basket (Note 1), and pickle in a hot hydrochloric acid pickling solution for about 30 seconds to remove the annealing scale (Note 2).

Parts should come out of pickle bath clean, bright and of approximately a uniform color.

Rinse well in two (2) rinses of cold running water and dip in hot cleaning solution.

Without rinsing off the cleaning solution, empty the basket on racking table or in a large, clean box (Note 3).

The dip in the cleaning solution is made to neutralize the acid and to prevent rusting while being racked for plating.

They are racked six (6) to a rack, so that flat sides will face anodes.

Operation No. 2

CLEANING

The racked stands are cleaned in a boiling hot electric cleaner, using reverse switch.

Approximately 2 minutes is required to clean.

The racks are the cathode until cleaned, but just before removing from cleaning bath the current is reversed and they are made the anode for 2 or 3 seconds and switched back as the cathode 2 or 3 seconds (Note 3).

They are removed from cleaning tank and hung in reservoir tank ready for plating (Note 4).

The reservoir rinse is made slightly alkaline with caustic soda.

Operation No. 3

PLATING

The loading racks are hung in moving cathode hot zinc plating bath with the flat sides facing the anodes and plated for 18 minutes with a pressure of 3½ volts and a current density of 12 to 15 amperes per sq. ft. Solution temperature 180 degrees F.

Operation No. 4

DRYING

The racks are removed from tank and rinsed twice in clean running cold water and dried in a centrifical dryer, without hot rinse.

ALTERNATIVE METHOD

Stands may be dried by hot water rinse provided a clean boiling hot zero water is used and extra care exercised in removing all surplus water from the stands by shaking, otherwise they will stain.

NOTE 1

The baskets most suitable for acid dipping are known as nichrome dipping baskets.

NOTE 2

The hydrochloric acid pickle used is approximately a normal solution.

Temperature, 200 degrees F.

NOTE 3

Formula for Hot Cleaner

4 oz. proprietory cleaner.
2 oz. caustic soda, 76%.
Water, 1 gallon.
Temperature, boiling.

NOTE 4

A round reservoir tank four feet in diameter with the revolving racking bar is best suited for holding these racks, both for loading and unloading plating tank.

NOTE 5

Formula for Zinc Solution

2 oz. proprietory cleaner.
3½ oz. 96/98% sodium cyanide.
7 oz. 76% caustic soda.
8 oz. zinc cyanide.

Add cleaner and boil, then add sodium cyanide and one-half of the caustic soda.

When sodium cyanide and caustic soda are dissolved add zinc cyanide in the form of a thin paste.

After all of zinc cyanide is dissolved, add balance of caustic soda.

SILVER PLATING STEEL REFLECTORS

By B. Hengst, Cleveland Branch.

The first operation in plating reflectors is to clean and copper-plate them in a copper cleanse solution which is known to most platers, which consists of sodium cyanide, copper cyanide and caustic soda.

The work is then rinsed and dipped in a sulphuric acid pickle to neutralize the alkali. They are then plated in the acid copper solution (agitated) for 10 minutes, then, after rinsing in cold and hot water, they are placed in drying oven.

They are then ready for buffing, which is done on an automatic buffing machine, then colored.

Silvering

The work is cleaned in a regular cleaner solution, rinsed in cold water and dipped in cyanide dip and flashed in nickel solution, rinsed in cold water and dipped in cyanide dip to neutralize the acid. They are then silver-plated, rinsed first in hot, then in cold water. This helps to avoid staining. They are then placed in oven, when dry they are ready for silver coloring.

LACQUER FINISHES ON CHANDELIERS

By Mr. W. D. Scott, Cleveland Branch.

As in plating, care should be taken in seeing that all the work is thoroughly clean.

The following finishes are on brass or steel, but on steel articles a coat of lacquer should be sprayed on first and allowed to dry.

Russett Bronze:

Lacquer	50%
Thinner	50%

Russet lining powder, two teaspoonsful; aluminum lining powder, very little. The powder should be mixed with the thinner in a one quart jar, then add the lacquer.

Do not use too much aluminum powder, as this gives the work a sanded appearance.

Mercury Gold Finish

This is a very beautiful finish, and throughout the eastern part of the country there is a great demand for it. This mercury gold is produced with a yellow enamel lacquer and a fine gold powder. The work is first bright acid dipped and then the high lights are buffed and colored. A glass spray jar is filled three-quarters full of clear lacquer and one-quarter of yellow enamel lacquer is added to the clear lacquer and thoroughly stirred. To this mixture, add 2 oz. of fine gold powder (a powder that has a brass appearance will not answer the purpose as well) and stir the powder in the lacquer thoroughly. After stirring, the mixture will have a greenish tint. Do not make a stock mixture of this, but mix it ready to use, as it deteriorates after standing a few hours.

When the powder has been thoroughly stirred in the lacquer, it is ready to be sprayed on the work. After spraying the parts of the electroliers and portables, the excess lacquer is relieved from the high lights and the work placed in the oven to dry. When the work is dry, use thinner and a rag and remove the rest of the lacquer from the high lights that was not removed before placing in the oven. The article will have a greenish tint, with the gold powder showing through faintly.

The next operation, and one that will bring the gold powder in relief, is the painting of a pigment powder on the article. This pigment powder is made from Paris green and yellow ochre, adding sufficient of the yellow ochre so that after mixing with Paris green the pigment will have a light green yellowish tint. This pigment is then applied to the work, and then wiped with a rag. This pigment should be dissolved in equal parts of turpentine and boiled linseed oil, to which has been added two teaspoonsful of hard oil finish varnish. Care must be taken that not too much of the varnish is added, as the pigment will settle too quickly, and it will be hard to remove. After the work has been painted with the pigment and wiped off with a rag, the high lights that were relieved with the thinner are lacquered with clear lacquer by employing a camel's hair brush, after which the article is finished.

Japanese Bronze

Finish with No. 90 emery.
Spray on one coat of lacquer.
Dry ½ hour.
Spray on one coat of yellow enamel.
Dry ½ hour.
One coat of Persian blue. To be applied with brush and rubbed off to suit taste.
Bake in oven until thoroughly dry.
Spray on one coat of lacquer, to get dull finish effect.
Bake in steam oven 1 hour at 130 degrees F. to increase durability of finish.
Brass Parts: To be acid dipped and finished same as castings.

Statuary Bronze

Finish with No. 90 emery.
Spray on one coat of lacquer.
Dry ½ hour.
Spray on one coat of the following mixture (very light).

Brown enamel	2%
Tan	1%
Red	½%
Lacquer	96½%

Dry ½ hour.
Spray on one coat of following to suit taste:

Blue	1%
Red	1½%
Lacquer	97½%

Dry ½ hour.
Spray on one coat of lacquer.
Bake in steam oven 1 hour at 130 degrees F. to increase durability of finish.
Brass Parts: To be acid dipped and finished same as castings.

CLEANER

By J. C. Singler, Cleveland Branch.

Trisodium phosphate alone can be used as a cleaner, but by adding caustic soda, aluminum sulphate, soda ash and rosin, the cleaner is improved. The rosin should be granulated. I have found the following proportions to be very suitable for the general run:

Trisodium Phosphate	3½ oz.
Caustic Soda	1 oz.
Soda Ash	2 oz.
Rosin (Granulated)	1 oz.
Aluminum Sulphate,	½ oz.
Water	1 gal.

If used with a current, ½ oz./gal. of cyanide can also be added, although it is not really necessary. I find that the double throw switch is of great value where brass work is handled, as one very short reversal will usually remove the tarnish.

CASKET HARDWARE FINISHES

By F. J. Burkhart, Cleveland Branch

On the following finishes I will explain my methods of procedure:

Light, Medium or Dark Bronze

Place the soft metal parts on iron racks, then pass them through the electric cleaner 3 or 4 minutes, then place in nickel tank 3 to 5 minutes, then into duplex copper for about 5 minutes. From this I pass it through a cold sulphurette dip immediately, until desired shade is obtained. Then bring out color on a crimp wire brush with water, then pass it through a sharp water dip, which is composed of 1 part muriatic acid and 9 parts water. Then dry and lacquer. The sulphurette dip is made up of 1½ ounces to 10 gallons of water.

Antique Copper or Old Copper

This goes through the same operation as above, except that the black is plated on with an arsenate of soda solution with sodium cyanide and copper cyanide in which copper anodes are used. The coppered articles are first color brushed with water and plated black, which takes about 20 seconds, then relieved with FFF pumice and water on a small tampico brush wheel, then passed through sharp water dip, dried and lacquered.

Antique or Old Silver

Parts are cleaned in regular manner and run in nickel for 12 minutes, then passed through silver strike and placed in the run for 15 minutes; then dip in hot sulphurette dip until blue black. Color the articles on a soft skin and flannel wheel, then to a tampico wheel with pumice and water. Dry and lacquer.

Plain Onyx

This is plated in regular manner and then run through hot sulphurette until deep blue. It is then color brushed with water, redipped and brushed again, is then transferred to tampico wheel and pumice for dull silver high-lights. Dry and lacquer.

Antique or Brushed Brass

Articles are cleaned in regular way; flashed in cyanide copper for one-half minute, then run in nickel for 10 minutes; then in brass for 30 to 45 minutes. Then color brush articles with a worn-out scratch brush and then plate them black, after which relieve on a tampico wheel with pumice and water. Then finish same as for antique copper. This rule applies to steel articles also.

OBSERVATIONS ON THE USE OF HYDROFLUORIC ACID IN NICKEL SOLUTIONS

By W. B. Pleadwell, Cleveland Branch.

The writer's experience is not based on the use of hydrofluoric acid as prescribed by Mr. Lovering.

I first used this acid out of self-defense to corrode a batch

of very insoluble anodes, but only in small quantities, 16 fluid ounces being used in 1000 gallon solution.

The following comments are based almost entirely on observations made while carrying on research work on another matter, viz.: the tarnishing of nickel plated steel and iron parts.

It is generally believed that copper under nickel will cause the nickel to tarnish very readily when heated.

I find this not to be the case, as a copper deposit under nickel has no influence on the tarnishing of the nickel deposit when heated up to 1000 degrees F.

The tarnishing of a nickel deposit under 1000 degrees F. is very often due to the nickel iron alloy deposit.

I believe that when sufficient hydrofluoric acid is used to maintain a clear solution a larger proportion of iron will be deposited than if no hydrofluoric is used.

When the acidity of a nickel solution is maintained by the use of hydrofluoric acid, the solution seems to have a tendency to become alkaline much quicker than when it is not used. There are, of course, several reasons why this can be so, but I am not in position to make any positive statement as to which of the several probable causes are the true ones.

The most probable one is the activity of hydrofluoric acid as a corrosive agent.

I also have very good reasons for believing that the iron in a nickel solution is the cause of a certain type of pitting, and, furthermore, the larger the percentage of iron deposit with the nickel the greater is the tendency for the deposit to occlude hydrogen.

Although these observations are in no way conclusive, nevertheless they may add some light to the use of hydrofluoric acid in nickel solutions.

A TEST FOR SODIUM CYANIDE

By J. Purcell, Cleveland Branch.

The following is a test that I used to good advantage during the war, when the scarcity of cyanide resulted in questionable materials. I tested one case claimed to be German cyanide and found 80% sodium cyanide and 42% cyanogen which was good for use in the plating room. The sodium cyanide manufactured in this country is labeled as to its contents.

Test—Weigh 23 grams of silver nitrate, dissolve in 1000 c. c. of water. Keep this solution in a brown bottle, as light decomposes it. Fill a 50 c. c. burette with the silver nitrate solution and run to the zero mark. Weigh 5 grams of sodium cyanide and dissolve in 250 c. c. of water, put 25 c. c. of this solution into an 8 oz. flask, add 5 c. c. of ammonia and .01 gram potassium iodide; shake well. Carefully add from the burette, three drops at a time until a turbid color appears; that is the end point.

Multiply the reading of the burette by 13, and then divide by 5, which will give you per cent of sodium cyanide; then multiply the per cent of the sodium cyanide by 0.53071. which will give you the per cent of cyanogen in the sodium cyanide,

COLORING OF METALS

By Chas. J. Smith, Cleveland Branch.

Metallic Marbleizing (Pink) No. 1

Polish the work so as to have a smooth surface, clean and strike in cyanide copper solution. Then put in sulphate copper solution until a smooth heavy plate; rinse in water with some oil on the top of it. Then let the work stand in the air for about 1 minute. Then put it in an old silver solution, run it with very low current for about 5 minutes. Wash off the oil and dry. Lacquer the first coat with a gun cotton lacquer, baked. Then put on a good gum or glossy lacquer.

Metallic Marbleizing (Dark) No. 2

Polish and copper plate the same as above, only silver-plate for about 15 minutes. Dry with hot water only. Then have a solution as follows: ¼ oz. nitric acid, ½ oz. liver sulphur, ¼ oz nitrate silver, 16 oz. water. Put this solution on with a sponge, touching the work where you want it dark, then dip in water quickly so as to keep dark. If you want it to lighten the color, hold it in the air until it becomes as you desire.

Metallic Onyx No. 3

Polish, and copper and silver-plate the same as No. 2. Then have a solution as follows: 8 oz. hyposulphite soda, 4 oz. acetate lead, 4 oz. acetic acid. Use warm, about 120 degrees F. Put work in this solution until it becomes a very yellow. Then have solution as follows: 1 oz. nitric acid, 2 oz. water. Now have small pieces of liver of sulphur about the size of a pea to have ready to put in the acid solution. Put acid solution in a bottle. Then have a cork with an oil can spout, so as to let the fumes out. Now drop one or two pieces of liver of sulphur in the bottle; put cork with spout on quickly. Hold the work close to spout or about ¼ inch away from work. It may be necessary to drop some more liver of sulphur in the solution. You can get colors shading from green, blue, brown, yellow and runs on to nothing.

Olive Green

Copper carbonate	4 to 6 oz.
Sodium carbonte	1 to 2 oz.
Sawdust	1 to 2 oz.
Water	1 gal.

Temp., 100 to 130 deg. Far.

Small work can be done in tumbling barrel by putting in the solution in the barrel, or on racks by immersion in solution. If a toy or a light green is desired, acid dip the work first.

Jap Bronze (Direct on Brass)

Copper carbonate,	4 oz.
Sodium carbonate	6 oz.
Ammonia, aqua	2 oz.
Water	1 gal.

Temp., 100 deg. Far.

By immersion. When the work becomes black, rinse dry, put in oven until it becomes brown. Temperature in oven about 150 degrees Far.

Statuary Bronze (Direct on Brass)

Soda hyposulphite	4 oz.
Copper sulphate	4 oz.
Water	1 gal.

Use hot.

Scratch brush dry or wet.

Barbardine (Imitation)

Liver of Sulphur	½ oz.
Copper carbonate	½ oz.
Water	1 gal.

Acid copper before putting in bronze solution; the copper carbonate is to stop the iris colors and slow the bronze solution. It may be necessary to dip it quickly back and forth for solution and to water, as this gives a more brown. No. 2—Dip the work in a water lacquer, dry or bake when cooled. Have a calcimine colored a pale green, put this in the background, then wipe off the high light by wetting a flannel rag in water. It can be lacquered again or waxed.

Hedley was at one time asked to speak on "Symptoms of Sick Solutions." If we remember right, he volunteered and claimed to be an authority on the subject, and then he deliberately fudged out of it as follows:

SYMPTOMS

By H. J. Richards, St. Louis Branch.

Symptoms indicate something else, if Webster's book is true;
Something different from what it is;
Maybe conditions which never have riz,
Webster we always regard as a wiz,
But I think it's funny, don't you?

For how can a thing be something else, something what it ain't?
It don't sound right; now, it's sure a queer go;
If it ain't what it is, how can it be so?
And you can't understand what you're sure that you know!
Such reasoning surely is quaint.

But so on through life I find it that way, when I try to learn something new.
The fellows who know it, the best in the land,
Express it in terms that you can't understand;
Their ambiguosity surely is grand,
But I think it's funny, don't you?

NICKEL ANODES

C. H. Buchanan, New York Branch.

This paper is brought before you with the idea in the writer's mind that it is a subject that should receive more attention from the plater than it does. There may be nothing new in it to most of the platers or electro-chemists, but it has been drawn up from the practical experience of a plater who has made a study of the nickel anode.

The anodes used in nickel-plating are cast in 85-87, 90-92 and 95-97% purity. They are cast in a number of different patterns or shapes. Besides the flat anodes there are the Elliptic, oval, octagon and two-bar, which are used more in preference to the flat anodes, being more economical on account of not having so much old scrap nickel to sell and there is a better circulation of the solution around them. The nickel also corrodes or dissolves more freely from all parts of the surface. The 85-87% anode has been used mostly by the stove manufacturers and some very good work has been done with them, but the same firms now prefer the 90-92%, and I think they are right for that class of work.

The 90 92% anode is used more than the others, but I think that the platers' preference will finally be for the purer anode, 95-97%. Nickel anodes for electro-plating should be a hemogenous and dense casting, one that will not disintegrate and crumble, but will dissolve freely from all parts of the surface in solution, making a good current terminal. The 90-92% anode is high enough in purity for the plating of iron and steel work, also mechanical or barrel plating, but the 95-97% anode is preferred by some concerns who do a large amount of plating, as they do not have to filter the solutions as often as they would if the 90-92% anode was used.

In making a choice of the two grades of anodes as to their efficiency and cost, I think if the 95-97% anode is a fine close grain casting it would be the best to purchase.

The best way to find out if the anode is replenishing the solution with nickel is to take some of the anodes out of the bath and remove the oxide. If the anode is dissolving freely from the surface and the oxide is fine and you do not find any grains of metallic nickel you are getting the best efficiency from the anode. If the anode is not dissolving freely after being in the bath for some time, there may be a scale or skin on the surface and they should be sand blasted. I think all nickel anodes should be sand blasted before leaving the foundry. An anode that is very porous or spongy should be recast and run over.

In regard to the anode and cathode efficiency there is a good article in Samuel Fields' work on the Principles of Electro Deposition. In his experiment with a cast nickel anode the cathode efficiency was 91% and the anode efficiency was 93%.

There have been a good many articles written and discussions held on the cleaning of nickel anodes and I believe in re-

moving the oxide from them, especially the flat 90-92% anode. The other shapes I have mentioned do not need to be cleaned as often, but if you clean them occasionally you do not have so much loss in scrap nickel.

If you have a rust spot on a steel knife as oxide, would you remove it or have it rust out? Is it not better to remove the oxide on the anodes than to have it remain and sell it for five cents a pound when the anode is broken up for scrap?

A dealer who bought old scrap nickel and oxide or dust, as he called it when the oxide was dried out, stated that he had some that seemed to be quite heavy. He had it analyzed and the nickel content was over 60%. Some concern paid a good price for a poor nickel anode.

I do not see how you can tell a good anode by the analysis, as the firms that cast nickel anodes have their own method of fluxing and different kinds of furnaces for melting the nickel.

The concerns that purchase anodes and employ a chemist have the anodes analyzed to see if the nickel content is up to the per cent of metal that they pay for and I think it is up to the plater to be able to tell if the anode is a good one by the way it acts in solution. Some of the platers keep the metal content of their solution up by the addition of nickel sulphate or single salts, but which is the most economical, to use nickel salts or have the anodes do the work that they were intended to do?

Some firms that do nickel-plating have the idea that there is more iron going over with the nickel than is really deposited.

I had an analysis made of some electrolytic or deposited nickel for the iron content. The chemist found 1.20 per cent of iron. The nickel solution from which the deposit was obtained had been run for over five years and had been kept in good condition by filtering and replenishing with double and single nickel salts. The work that was plated was cast iron and steel. The anodes were 90-92% and were kept clean by removing the oxide when necessary. The density of the solution with its impurities was 6½ degrees Baume and the thickness of the deposit was 1/1000 in. The current was run at a pressure of 2 volts.

Solutions that are run with a higher current density and voltage, such as mechanical or barrel plating, will deposit more iron with the nickel.

The analysis of the 90-92% anode shows from 3 to 5% iron.

This question has often been asked: "Which nickel deposit gives the whiter color and retains it free from tarnishing or oxidizing longer, the deposit from a solution using the 90-92% anodes or from one using the 95-97% anodes?" My own opinion is that the deposit from the solution with the purer anodes gives the most lasting and the whiter color.

Have you ever tried the experiment of making a nickel solution by using ammonium sulphate dissolved in water with sheet charcoal iron or sheet steel as the cathode and cast nickel anodes? You will find that you can get the density of the solution up to 5

degrees Baume, but not much higher. The reason I mention this experiment is because I think it is a good way to see how the anodes dissolve and do their share in keeping up the metal content of the bath.

Nickel is a refractory and hard metal to cast for durability in electro-plating. It requires about 2800 degrees Fahrenheit to run a 90 92% anode and a higher temperature for the 95-97%.

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THE POLISHING AND PLATING OF DIE CASTINGS

By A. Pflomm, New York Branch.

The purpose of this paper is not to tell the plater how to handle his particular line of work, but, to show the process used by the writer in handling this class of work and to give to those not familiar with plating this metal a basis to work on.

The finishes called for were: polished nickel and satin finished gold on phonograph parts such as, tone arms, sound boxes and elbows.

Polished Nickel Finish

The castings were first run over with a rag wheel set up with 180 or 200 emery, then cut down on a rag wheel with tripoli. Some polishers prefer to skip the emery operation, but, I believe, there is nothing gained by eliminating this operation, because the excessive heating of the metal, produced by the necessary extra buffing causes cracks and breakage. This also happens even when the work is first polished, but, in this case, the percentage is a great deal smaller.

After cutting down with tripoli, the work was soaked in gasoline for a few minutes, and corners and crevices thoroughly cleaned out with a bristle hand brush. The thorough cleaning of corners and crevices was an important procedure, as the dirt would pack in these little pockets, and if not cleaned out properly would cause trouble, since the next operation of coloring would add more dirt and make it impossible to clean out properly without staining the metal, which in turn caused faulty plating.

After washing in gasoline, the work was dried in sawdust, and colored on a loose buff with lime composition. It was then wired and run through a mild cleaner for about a minute or as long as it would stand without being attacked by the cleaner. Without rinsing, the work was transferred to an electric cleaner, made up of 3 oz. sodium cyanide to 1 gallon of water. The working temperature of this solution was 110 to 120 degrees F. Sheet iron anodes were used, and the work was hung on the cathode rod as for plating with full line voltage, which, in this case was about 6 volts.

From the electric cleaner, the work was rinsed, given a momentary dip in a solution, consisting of 8 fluid ounces Muriatic acid and 1 gallon water, rinsed thoroughly and hung in nickel bath.

Before hanging in nickel, a dummy or anode was hung at each end of the cathode rod, and rheostat was turned until 4½ volts was registered. The work was struck at this voltage for about three minutes then plated at 3 volts for five minutes. A deposit heavy enough to be nickel-covered was received in this time. The purpose of the dummies was to prevent burning the work hung at the ends.

Formula of Nickel Solution Used:

Nickel ammonium sulphate	10 oz.
Nickel sulphate	10½ oz.
Sodium chloride	2 oz.
Magnesium sulphate	2 oz.
Water	1 gal.

Procedure of Making Up Solution:

After calculating amount of salts necessary to make a bath, the nickel sulphate was dissolved in hot water, and enough nickel carbonate added to neutralize the free acid. The other salts were then dissolved and added then enough water to make up the required bulk.

The working temperature of the solution was 94 to 100 degrees F. I worked the same solution at room temperature, but the results were very poor, compared to those at the higher temperatures.

Characteristics of solution when first made up: Metal contents, approximately 3 ounces per gallon; reaction with litmus, slightly acid; density, 13 degrees Be at 94 degrees F.; C. D., 12 amperes per square foot at 3 volts pressure, as registered on a Heil Foot Ameter.

After plating, the work was rinsed, heated in boiling water and hung in drying oven. It was then nickel colored.

Satin Finish Gold.

The work was polished on a rag wheel set up with 180 or 200 emery. The wheel was kept free from grease and dirt by touching now and then with a piece of clean lump pumice. It was then satin finished on a steel wire brush, with a lathe speed of 2,800 rotations per minute. The work was put through the same cleaning process, excepting the gasoline wash, as was used for nickel finish; and plated in the nickel bath for five minutes. It was then rinsed and struck in a brass solution for three minutes, scratch brushed on a soft brass wire brush, lathe speed 1,800 to 2,000 rotations per minute, rewired, rinsed, in water, then in a hot solution of sodium cyanide, 3 ounces to 1 gallon of water, and immediately struck in the gold solution for 15 to 20 seconds, depending on the behavior of the solution and the color desired. It was then rinsed and heated in boiling water and hung in drying oven. After drying and wiping free from stains, it was sprayed with a good quality transparent lacquer.

Formula of gold solution used was 10 Dwt. gold as fulminate, 1½ oz. sodium cyanide, 1 gal. water. Working temperature, 110 to 120 degrees F., about 9 volts pressure.

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THE PLATER EXECUTIVE. II.

By W. J. Allen, 2nd Vice-President A. E. S.,
Grand Rapids Branch.

"OUR EMPLOYES"

In a previous paper I used five headings, two of which were: "To handle workmen and women efficiently and economically"; "To keep in touch with, and secure the confidence of the workers." I will confine this paper to those two subjects in more detail than formerly.

I apologize for the use of the pronoun "I," first person, singular, and its use here and later in this article and the one which will follow. It is practically impossible to avoid its use in any article which deals mostly with personal experience of the writer, and, especially in these days when selfishness is such a prominent constituent of the biped, man. Not that selfishness is any more common, as a characteristic of that biped, now, than before, but during the past few years, I (there it is again) cannot help but feel that, as a whole people, the American is beginning to realize that he is, and has been, entirely too much absorbed in self-interest. In other words, his eyes have been opened—to other peoples' selfishness. Therefore, according to logic, based on the foregoing, I shall use "I" whenever I think it necessary, though of course an "I" used by any other person is very poor taste, to say the least.

In order that the two subjects are treated fairly and without prejudice, it is necessary that all our relations with the employe must be considered, and that they should come in consideration, in the following order: hiring, firing, method of payment, personal touch and the "square deal."

Hiring labor for the Plating Department, or for that matter, nearly any department, should be done in case of a large plant by the "Employment Manager." However, no one should be hired without understanding that the work is, as a rule, wet and somewhat disagreeable. To simply hire a man and tell him that the pay is so much per hour, "come to work at seven, in the morning" is not enough. The overturn of labor in a Plating Department is very expensive, as new help will always spoil work; sometimes a great deal of it, too. In many cases spoiled work in plating necessities repolishing and other expensive operations, so consequently the Employment Manager should work in complete harmony with the foreman, also the foreman should act in harmony with him.

Personally, I am not particularly pleased in my experience with Employment Managers. Many of them are young men of no particular experience and others are one-sided in their experience. There may be, and probably are, a few good Employment Managers, but they are few and far between. However, it is a good thing to have someone ask the preliminary questions of each applicant, leaving final questions for the foreman to ask. Nevertheless, no Employment Manager should have the

right to transfer a man from the Plating Department to a more pleasant one until the foreman of that department has agreed to the transfer; it would disorganize a disagreeable department to make such transfers a rule.

To discharge a man should not rest with the foreman or the Employment Manager. It should rest with the foreman only after consultation with the superintendent. I know that many will disagree on the above point, but it is good business from every standpoint.

Payment of workers should only be on the basis of production of good work. Plating foremen should make careful studies of motions and steps in the work of their employes. Many a man that moves slowly in the plating room will produce more good work in a day than the man who rushes from one place to another with a great show of hard work. I have always watched the hustler; it is my experience that he is liable to make mistakes. that the more careful, slower man does not make.

On a continuous run of similar goods through the whole day, piece work can be used to good advantage. Paying a group working together a fair price for total labor-giving the man leading the group, the "straw-boss" 1 to 5% of the total and the balance shared alike with them all, is a very good way. Piece work will secure nearly double the output of a good group of day workers if the price is held to a fair standard and not cut. There will be greater contentment among the workers also.

However, if day work is necessary—men should not be on an even basis of payment, but there should be quite a difference of rate between the low and high rate. Also the wise foreman tries to anticipate the necessity for raising pay of any employe; more of a feeling of respect for his authority will be shown by his whole "gang," if he can notify men of rate changes before being asked for them, and consequently the efficiency of his "gang" will be higher.

That brings us to the question of the importance of personal touch with employes. No man should feel a great degree of superiority over the men he employs; some of them may have lacked their opportunity to advance, and in every case it is necessary to hold their confidence. The foreman should know when his man buys a home, when a new baby comes to his home, and minor things also; should show interest in those things, inquire as to the health of mother and child frequently, know how payments on home are coming, give all advice possible, and as many other intimate things as possible with each individual worker. In other words a good foreman is humane, and if he will follow the course outlined above will become sincerely interested in the affairs of his men.

I cannot emphasize too strongly the most dangerous practice of some foremen. It is the practice of some to make personal friends with one or a few of their workers. That is an impossible condition, and no man can call himself a good executive if he does that. Neither is it right, or wise, to employ relatives in

your "gang." If I were asked by a young man just taking his first factory executive position "What is the most important thing **not** to do?" I would answer, "Do not employ a personal friend or relative."

Last of all, in dealing with your workmen and women, do not make promises you cannot keep, do not put off questions that they think should be answered, do nothing that will injure their confidence in your honesty toward them. Summing it **all** up in one sentence—treat everyone the same as you would want everyone to treat you—with an absolutely "SQUARE DEAL."

SPECIAL INFORMATION FROM THE SUPREME SECRETARY REGARDING CERTIFICATES

We take pleasure in informing you that the railroads, operating under the Central Passenger Association and the Trunk Line Association, have granted us a reduced rate of one and one-half (1½) the regular fare to Indianapolis, provided we have in the hands of the Supreme Secretary not later than 5 p. m. Friday, July 1st, at the Claypool Hotel, 350 certificates. We would suggest to all those attending the convention from any point not in the above territory, that they purchase a ticket to the nearest station on any of the railroads running on the above lines (which can be ascertained from any ticket agent) and there purchase a through ticket to Indianapolis, at the regular rate of fare going, and to be sure to ask for a **certificate, not a receipt.** Tickets can be purchased with the certificates on the going trip on any date from June 25th to July 1st, but on no other dates. If we have 350 or more certificates in the hands of the Supreme Secretary not later than 5 p. m. on July 1st, the agent of the railroads will validate them, and after being signed by the Secretary they will be returned to the original holders, who upon presentation of the certificates to the ticket agent at the railroad station in Indianapolis, at least one-half (½) hour before train time, can purchase a return ticket for the home journey on the same route they arrived by at one-half the regular rates, up to and including July 6th. In this connection, may we suggest that if any of our members or any friends, whether they are well acquainted with them or not, intend traveling to Indianapolis, either on business or pleasure that your members should endeavor to have them obtain a certificate when purchasing their tickets. If they do not visit the convention have them hand it to someone who is attending and they can hand it to the secretary for endorsement. We offer this suggestion so as to obtain if possible the requisite number of certificates, namely 350 or more, in order to obtain one-half fare for the return trip. We will need to do considerable hustling in order to do so, and we must depend on all of our members to assist us in every way possible. Can we depend on your branch?

WHAT THE BRANCHES ARE DOING.

Boston.

Meets first and third Fridays of each month, 8 p. m., at the American House. Secretary, A. W. Garrett, 37 Dorset St., Dorchester, Mass.

Boston Branch met Friday the 20th. President Nihan in the chair. After the regular order of business a motion was made that the Branch change its meeting nights to the 1st and 3rd Thursdays of each month, as some of the members will be going to school on Friday nights. The following officers were re-elected for the next year: President, J. J. Nihan; Vice-President, Louis Gate; Secretary-Treasurer, A. Talamona; Recording Secretary, A. W. Garrett; Sergeant-at-Arms, E. White; Librarian, H. H. Whitcomb; Trustees (five), Chairman, T. J. McShane, F. Mackie, P. Nelson, R. Barnstead and S. Herrick. Past President Mackie's talk on the nickel solution was laid over until next meeting.

Boston Branch met Thursday, June 2, 1921, with President Nihan in the chair. After the regular order of business, a motion was made to suspend meeting for the rest of the summer. So that the next meeting of the Branch will be held the first Thursday of September. Mr. Mackie gave another one of his talks on the nickel solution and the many ways of making them up. These talks are very interesting.

Bridgeport.

Meets third Friday of each month in its laboratory, 260 John St., Bridgeport, Conn. Secretary, Louis J. Maraffi, 744 Hancock Ave., Bridgeport, Conn.

Our May 20, 1921, meeting was held in the laboratory with about 20 members present. Mr. J. M. Dunn in the chair. The application of Mr. G. J. Belle was voted on and he was elected as an active member.

The secretary's annual report was read and voted accepted as read. Election of officers was held, with the following results: President, John W. Slattery; Vice-President, Wm. Thompson; Secretary-Treasurer, Louis J. Maraffi; Sergeant-at-Arms, John Rall; Librarian, David Fleming; Board of Managers, J. M. Dunn, Wm. Stratton, Wm. Flaherty. After election of officers, Mr. Slattery took the chair and a rising vote of thanks was extended to Mr. J. M. Dunn for the excellent leadership as president for the past three years.

Mr. Hogaboom spoke of the difficulties encountered in obtaining a charter for the Waterbury Branch, and asked the support of the Bridgeport Branch in this matter.

It was voted that the delegates to the convention be instructed to ask that a permanent charter be granted to the Waterbury Branch. The following were elected as delegates to the convention: First, Mr. S. B. Hogaboom; Second, Mr. J. M. Dunn; Third, Mr. Amos G. Reeve. Several of our members arranged for a trip to Waterbury on Saturday to see nickel anodes made.

Chicago.

Meets second Saturday of each month, 8 p. m., at the Briggs House, Randolph and Wells Sts., Secretary, Frank J. Hanlon, 2855 N. Richmond St., Chicago, Ill.

On Saturday, May 21st, 1921, Chicago Branch A. E. S., guided by our esteemed co-worker, Mr. S. E. Huenerfauth as chairman and assisted by a couple of Supreme Guys, had their party, and it was a grand social success.

The installation of the officers, a feature usually performed without any function in all our branches kind of got on the nerves of our esteemed friend R. J. Hazucha, who proposed the event and then when President Thornton selected Mr. S. E. Huenerfauth to put it over, this is what happened:

S. E. Huenerfauth wrote, at considerable time and patience, a beautiful ritual for installation ceremony, and selected to assist himself as the Honorary Installing Officer Past Supreme President O. E. Servis, and as a mark of honor had on rostrum during ceremony our esteemed friend and Past Supreme President Charles Proctor.

At conclusion of ceremonies the chairman furnished us with some nice vaudeville and music, and then spread the dice for "Bunco," which was limited to ten games, as time was short and the prize list was long. Then our "Proctor" showed some sporting blood, getting second highest prize, the first going to Mr. Gilbertson's daughter.

After distribution of the prizes and everybody talked it over, Mr. Huenerfauth set the vaudeville going again. We finished the evening dancing to the strain of good music, and finally vanished at the charmed hour of twelve. Our Vice-President, Wm. Bott, was very much in evidence with a boy's cap, but you can't fool us, Bill.

Lockerbee and DeGrazio were in from Indiana, and Allen and party of friends from Waukegan were there and took home Jim Emmetts "Oxen and Plow." E. Lamoureux showed judgment sent in token and then set his wife up to turn around and win the same back. The Hanlons tried the same stunt by trying to win their donation, but since a short time ago Mr. Thornton has a dark secret from his wife and now he wants something of Hanlon's pretty close to himself, so he took our bath towels. "Some rub."

L. Schulte came in with his wife and he is some shimmy shaker, almost a quaker, and last but not least Dad Liscomb punched tickets and was caught looking the actresses over.

The June 11th meeting of Chicago Branch opened with Mr. George Burt the President presiding, also the new Vice President, W. G. Bott, in his station; it was hot, and a very goodly crowd was there, but all they would talk about was the convention, so our question box was the sufferer.

Our Convention Booster Committee has reported that everything is all set for the special coach on the "Hoosier Special" leaving Chicago June 28th, 5:30 p. m. About 50 people are going

to ride on it and there will be 10 or 12 who will drive there. We expect to see about 75 Chicago members register at Indianapolis, Ind.

Educational Committee Chairman O. E. Sevis said he had bona fide evidence that Chicago Branch would have a half dozen papers, each of which would be a credit to the Society and branch from which they come.

Our chairman, S. E. Huenerfauth, reported that our dance was a social success and Bunco and entertainment was par excellence, even if crowd was small.

The only two questions asked new Librarian F. Greenwald are as follows (they were easy for him this time. Wait.):

"What is good platinum solution?"

Ans. Rosseliers solution of phosphate of sodium and platinum chloride, phosphate of ammonia boiled until ammonia is evaporated, then be careful not to precipitate platinum by any loose metal such as wire from scratch brush or loose pieces from casting, as this will precipitate and require recovery, and recovering at a lot of labor.

"What is best way to produce black upon aluminum?"

Ans. Same can be plated in arsenic, black with little nickel in solution, or can be plated in nickel and then run in black nickel to an advantage.

Wish to mention that The Queen Bee in Chicago Hive of A. E. S., Mrs. E. Z. Jenks Gailey, of Seattle, Wash., dropped in upon us on June 9, 1921, and said hello. She is going to be at the convention.

Milwaukee.

Meets first Friday of each month at West Side Bank Building. Secretary, R. Steuernagel, 1508 *Concordia Ave., Milwaukee, Wis.*

The regular meeting was held June 3, 1921, with President Armour in the chair, and a large attendance. One applicant was elected to membership. Mr. H. E. Willmore, of the Chicago Branch, installed the following new officers in a manner which pleased everyone:

President, H. E. Armour; Vice-President, J. S. Guttman; Secretary-Treasurer, R. Stenernagel; Librarian, D. Wittig; Sergeant-at-Arms, H. C. Hurtig; Board of Managers, R. Hazucha, A. E. Koehler, F. Marx.

After the installation the branch extended Mr. Willmore a rising vote of thanks.

President Armour, in behalf of the branch, presented our Librarian, Daniel Wittig, with a fountain pen for the good services rendered in the past.

Milwaukee Branch is working hard to get a good delegation to the Indianapolis convention.

The question box was laid over to next meeting to give Daniel a chance to break in his new pen.

Cleveland.

The Cleveland Branch meets every second and last Saturday of the month at 1344 *East Prospect St. Secretary B. F. McCormick,* 1941 *West 77th St.*

This branch departed from its usual custom of holding their "Laboratory Night," meeting at their rooms, and at the invitation of our Librarian, Mr. Singler, transferred the meeting to his residence. Out-of-town members present were Mr. Ter. Doest of Akron (whom you will no doubt meet at the convention, he being one of our delegates) and Mr. Kochle of Elyria. We had some very heated and animated discussions concerning methods and conditions arising in handling copper baths and various finishes on copper and silver deposits. After everybody had run pretty much out of gab Mr. Singler obligingly entertained with several selections by his personally conducted orchestra, using a crank to stabilize its transmission. Several of those present could see more in the great American game (draw) than they could in good music, but it was not to be for long, as lunch was announced at 11:15, which diversion was enjoyed as fully as any matter that had come before the meeting during the evening. The stay-at-homes missed an elegant time.

This meeting having been such a signal success, we intend to have more of them during the summer. If the members take kindly to the idea of these residential meetings and can take turns at it we can learn then who the most careful platers are by simply analyzing cellar production; Hydro elements tastefully considered.

Permit me to announce that at our previous meeting, when the election of officers was the subject under discussion, we elected for the ensuing year the following officers: President, W. D. Scott; Vice-President, P. J. Harrch; Secretary, B. F. McCormick; Librarian, J. C. Singler; Board of Managers, Fred Luzina, C. J. Smith, R. H. Sliter; Delegates to Convention, H. J. Ter. Doest, W. D. Scott, B. Hengst.

Philadelphia.

Meets first Friday of each month in the Harrison Laboratory Building, University of Pennsylvania, 34th and Spruce Sts. Secretary, Philip Uhl, 2432 *North 29th St., Philadelphia.*

Our regular meeting was held June 3rd, with the President, Geo. Gehling, presiding. There was a good attendance and all taking keen interest in the various discussions on:

"Why does aluminum or any white metal plate quicker than other metals?"

"What is the cause of brass plating on steel to flake?" No conduction salt (sal ammoniac advised).

"What will prevent discoloring of brass plated chains?" Gelatin dip was suggested.

H. B. Farrand and A. Clabaugh were elected as delegates in addition to Mr. Uhl,

New York.

Meets every second and fourth Fridays of each month at the Broadway Central Hotel Parlors, New York, N. Y.

Secretary E. Haas, 504 East 163rd St., New York City.

President Sterling presided at the May meetings of New York Branch of the A. E. S. One application for active membership was received and referred to the Board of Trustees. A general discussion concerning the Indianapolis Convention was indulged in. The following are the delegates elected: T. Haddow, J. Sterling, G. Wilson; Alternates: J. Burke, J. A. Stremmel, W. Fischer.

The new officers elected for the ensuing year of New York Branch are: President, J. A. Stremel; Vice-President, W. Fischer; Secretary-Treasurer, E. Haas; Recording Secretary, P. Morningstar; Librarian, J. Burke; Sergeant-at-Arms, F. S. Stretch; Assistant Sergeant-at-Arms, G. Corrubo; Trustees, J. Sterling, T. Haddow, F. Householter, W. Voss, B. Popper.

Detroit.

Meets first Friday in each month at Cass Technical High School, Platers' Classroom, 2nd Avenue and Beech Street, at 8 p. m. Secretary O. H. Phelps, 951 Clay Ave., Detroit, Mich.

Our regular monthly meeting was held June 3, with a very good attendance. As we installed our new officers at this meeting, the members turned out in good numbers, showing their willingness to co-operate with the newly-elected officers for the ensuing year. We were also honored by the presence of two members from the Chicago branch—Mr. "Dad" Liscomb, the man with a smile. "There are smiles that make you happy; there are smiles that make you glad, but we'd go miles to see the smiles that come from 'Dear Old Dad.'" Our worthy President, Mr. Kutzen, embraced the opportunity to "ask Dad" many interesting things. Also the Immortal Colonel Hansjosten, whose famous words are "A Hoss, a Hoss, my Ford for a Hoss." Mr. Hansjosten is now located in Detroit and we trust will be a regular attendant at our future meetings.

Mr. E. Woodmansee, who was elected secretary and treasurer at our last meeting, had to decline the office, owing to circumstances over which he had no control.

Mr. O. H. Phelps was elected secretary-treasurer and A. Portensky was made vice-president.

Detroit Branch believes in putting the young blood to the front and by electing L. P. Brockway president and A. Portensky vice-president—two young men just full of pep—we are sure the ensuing year will be a "humdinger."

Our Past President, Mr. Geo. Kutzen, has retired from the plating game and entered into the hardware business. The Detroit Branch wishes him every success in his new venture.

Our delegates are enthused over the coming Convention and vow they will be on the job at each business session, and will bring back a report of every detail that transpires.

Cincinnati.

Meets on the first and third Friday of each month at 1262 State Ave. Secretary, W. J. Husing, 729 McMakin Ave., Cincinnati, O.

At our May meeting, one active and one associate member was admitted. Our meetings are well attended and all members are taking a more active part.

The convention is much talked about and we expect the "Hoosier State" Capitol to put over something good. We'll be there, so come along, boys.

Indianapolis.

Indianapolis Branch holds its business meeting the second Saturday in each month at Hotel Denison. Secretary, Louis Mertz, 1725 Union St., Indianapolis, Ind.

The branch held its regular meeting June 11th with a good attendance. One member was suspended for non-payment of dues. One member mentioned a trouble he experienced in a hot copper solution made from metal cyanides. The work was absolutely clean when put in copper solution, but came out with round spots on it, the spots containing no copper. After several theories were offered he told what investigation brought out. He found that the solution contained too much sodium and that the helper ran the temperature too high. By lowering the temperature and diluting the solution the trouble was overcome.

St. Louis.

Meets first Saturday of each month at Barr Branch Library, corner Jefferson and Lafayette. Secretary, H. H. Williams, 4156 Botanical Ave., St. Louis, Mo.

Regular meeting held on June 6th. Vice-President C. T. McGinley called meeting to order. The "Booster Committee," through its chairman, reported that a goodly number have promised to attend the convention, most of whom will leave St. Louis on morning of June 29th. We will also have some exhibits. The new officers as reported in last month's "Review" were installed by E. J. Musick, who said so many nice things about them that they could say nothing themselves. Even George blushed, but he came back by saying that any officer can make good when the members back him up. Let's all try it.

Mr. Jordan had an exhibit of copper plated coke tin in answer to an inquiry at a previous meeting.

One application for membership was received and one applicant elected to membership.

We regret to announce the death of W. H. Musick, father of E. J. Musick, which occurred on June 8th. Mr. Musick established a successful job plating business many years ago, and became well known among the manufacturers in this section. Owing to ill health for the past few years, the active management of the concern has been left to E. J. Musick, who has been very devoted to his father through the long period of illness. We extend our heartfelt sympathy to him and the rest of the family.

Connecticut Valley

Meets at Hartford, Conn. Secretary, Geo. E. Vibberts, 31 Crown St., Hartford, Conn.

Regular meeting was held at the Arrow Electric Company plant on May 23rd. President H. R. MacFayden in the chair and eight members present. All officers present. New business order drawn on treasurer for $10.00 for secretary's expenses for year ending May 31. The following officers elected for coming year: President, Jas. A. Bagshaw, New Britain; Vice-President, Wm. H. Legate, Hartford; Secretary-Treasurer, George E. Vibberts, Hartford; Librarian, E. N. Miller, Hartford; Names of Representatives to Supreme Convention: H. R. MacFayden, Hartford; Jas. A. Bagshaw, New Britain; W. E. Sherman, Hartford. Secretary-Treasurer's report read and motion made and seconded that report be accepted.

Mr. George Cartlidge invited us to meet at his home, 123 Boulevard, Hartford, June 8th. His invitation was accepted.

Rochester.

Meets on the second and fourth Fridays at Seneca Hotel. Secretary, E. E. Fitch, Jr., 607 Sawyer St., Rochester, N. Y.

Our last regular meeting held May 13 was full of pep. Mr. Raymond Lopez and Mr. Emil Troxler have promised papers for the convention. We held our election, putting an entirely new set of officers in the chairs. The retiring officers are certainly to be congratulated for the work they have done during their time as office holders.

The new officers are: Mr. Emil Troxler, President; Joseph A. Michels, Vice-President; E. E. Fitch, Jr., Secretary-Treasurer; Ralph K. Hutchings, Bert Groh and Charles Puffer, Trustees. The aim of the new officers is to get everybody on their toes and have 100 per cent meetings. Our one best bet at present is "Boost for Indianapolis." Make sure to attend our next meeting.

Toronto.

Meets second Thursday of each month at Occident Hall, Bathhurst and Queen Streets. Secretary, Chas. Kemish, 271 Boston Avenue, Toronto, Ont.

Our regular meeting in May was taken care of by our President, Thos. O'Keefe.

One candidate was elected to active membership. During the course of the evening, a letter was read from the Educational Committee of Indianapolis Branch requesting a paper for the convention. One of our members, Mr. Alex Armstrong, stated that he will present a paper on "Platinum Plating," which we hope will be of interest to many members.

Election of officers were as follows: For President, Wm. H. Cresswell; Vice-President, John Young; Secretary-Treasurer, Charles Kemish; Sergeant-at-Arms, Wm. Cox; Librarian, Alex Armstrong; Trustees, J. A. Magill, F. H. Thiers and James Vallier; Delegate to the Convention, James Vallier.

Pittsburgh.

Meets every first Saturday at 8 p. m. at United States Bureau of Mines Building, Forbes St. Secretary S. E. Hedden, 227 5th St. Aspinwall, Pa.

Meeting of June 5th called to order by President John Corbit. After the regular business, delegates to the annual convention were nominated and elected, the results as follows: Delegates: S. E. Hedden, Elliott S. Corbit and John Corbit. Alternates: H. Peter, N. Zadowski and Abe Kantrowitz.

Application of Otto V. Stewart, 945 Ramsey Ave., Wilkinsburg, Pa., Process Engineer, Westinghouse Electric and Manufacturing Co., East Pittsburgh, Pa., as an associate member was received.

Under report of committees, Mr. E. S. Corbit, chairman of welfare committee, stated how much the members of the branch appreciated the work of the secretary-treasurer and in order to show their appreciation he, in behalf of the members, presented the secretary-treasurer with a beautiful gold-mounted fountain pen. The secretary-treasurer could not find words that would express his appreciation of the kindness shown by his fellow members. It is something that will always be kept and when used will remind him of the good fellowship of the members through the two years' growth of our branch.

Under good of order, Mr. Peter asked for a successful formula for black nickel. Mr. Abe Kantrowitz stated that he had made up and used with good results the following solution: Double nickel salts, 8 oz.; sulpho-cyanide, 1½ oz., zinc sulphate, 1½ oz., using 1 volt; a ½ hour deposit would give good results. Mr. Peter is using the same solution, except that he uses 12 oz. of nickel and 7 volts, his work is upon flat sheet steel, so he has no trouble with the high voltage. Mr. Peter also stated that he uses electrolytic nickel anodes and has no yellow sediment in his tanks. This is an important feature and all platers should take advantage of this fact. After some discussion, the members present decided to try out the electrolytic anodes. Mr. J. L. Jones spoke upon the advantage of using the pure electrolytic nickel anodes, also that a paper that was read before the American Electro-Chemical Society upon the subject of harder deposits that this could be had by raising and lowering the cathodes, that the action of the oxygen of the air had some effect on the hydrogen of the solution and caused a much harder deposit, although the deposit showed signs of being pitted. At this time, Mr. John Corbit installed the new officers and, as there was no further business, meeting closed to meet July 9th when the reports of the delegates to the annual convention will be read. It is desired that every member be present at that time and bring some member of his firm with him.

COLOR BLIND

"Is this the hosiery department?" said the voice over the phone.

"Yes," replied the weary saleslady.

"Have you any flesh-colored stockings in stock?" asked the voice.

"Yes," replied the weary saleslady. "Whaddy ya want—pink, yellow or black?"

"Does Hedley enjoy golf?"

"I can't say that he enjoys it, but he plays it a lot."

"Ole," said the preacher to the Swedish bridegroom-to-be, "do you take Hilda Sorgeson for your lawful wedded wife, for better or for worse?"

"Oh, well," replied Ole gloomily, "Aye s'pose Aye get little of each."

AIN'T IT THE TRUTH?

Mrs. Goodsole—"I am soliciting for the poor. What do you do with your cast-off clothing?"

Mr. Longsufferer—"I hang them up carefully and put on my pajamas. Then I resume them in the morning."—Boston Globe.

WE WILL MEET YOU

511 East 11th Street,
Indianapolis, June 12th, 1921.

Mr. H. H. Williams,
St. Louis, Mo.

Dear Mr. Williams:

At the meeting last night I found that the Reception Committee has arranged to be at the depot and at the Interurban Station to receive and direct all members and visitors. I might state here that we have only one railroad depot here in Indianapolis, so the visitors will not get lost very easy. Of course, the Interurban cars do not come in the same depot. In either case the traveler should stay on the cars until they reach their destination for in all cases the Interurban Depot and the Union Station are by far the nearest points to the hotels.

Yours very truly,
CHARLES A. ORMSLY.

A SURE WAY.

"Uncle, how did you manage to get rich?"

"By keeping away from every tempting scheme which promised to make me rich overnight."

ELECTED TO MEMBERSHIP

Bridgeport

George J. Belle.....1857 Fairchild Ave., Bridgeport, Conn.

Chicago.

Fred J. Bedord.....3137 West Flournay St., Chicago, Ill.

Cincinnati

Frederic Brummer.....1262 State Ave., Cincinnati, O.
John Burns.....1329 Main St., Cincinnati, O.

Indianapolis

John F. Vehling.....4217 College Ave., Indianapolis, Ind.
Wm. Cartheuser (reinst'd)....718 Weghorst St., Indianapolis, Ind.

Philadelphia

W. H. Schweitzer.....1012 Spruce St., Philadelphia, Pa.

Toronto

Henry C. Ives.....390 William St., London, Ont.

Waterbury

Wm. J. Grey
John A. Messick
James J. Leonard
Wm. F. Guilfoile
Wm. Aschoff
John J. Seibert
Chas. E. Miller
Walter W. Rowe
Edward L. Seibert
Lindell S. Turner
Donato J. Musicio

APPLICATION FOR MEMBERSHIP

Pittsburgh.

Otho V. Stewart (associate), 945 Ramsey Ave., Wilkinsburg, Pa.
A. J. DeSeve (active)....2226 Herringbone Ave., Youngstown, O.

St. Louis

Harry Siemers (active).....3410 N. 14th St., St. Louis, Mo.